

ABSTRACT

A charged particle beam apparatus and method for locally removing material from a predetermined location on a workpiece, such as the removal of a metallization layer covering an alignment mark on a wafer. The invention is particularly suited for high-volume mass production of semiconductor chips or electromechanical devices. According to one embodiment of the invention, a layer of material covering an alignment mark on a wafer is removed by ion beam sputtering using a non-LMIS beam directed at an oblique angle to the sample surface.